

WHAT IS CLAIMED IS:

1. A control device of LEDs, comprising:
driving means for driving LEDs; and
pulse output means for varying, of a pulse signal
outputted to the driving means, a cycle and a corresponding duty
ratio, to control the driving means.

2. The control device of LEDs of Claim 1,
wherein the pulse output means varies, of the pulse
signal, the cycle and the corresponding duty ratio so that a
luminance variation characteristic of the LEDs is approximated
to a luminance variation characteristic of an electric bulb.

3. The control device of LEDs of Claim 1,
wherein the pulse output means includes:
lighting-up means that gradually increases, of
the pulse signal, the cycle and the corresponding duty ratio
during a lighting-up period of the LEDs since lighting-up of the
LEDs starts.

4. The control device of LEDs of Claim 3,
wherein the lighting-up period includes a plurality of
cycles, wherein the cycles serially take place and wherein each
of the cycles is corresponded to by a duty ratio,

wherein the lighting-up means includes:
given cycle set means for setting a
cycle of the pulse signal;

given duty ratio set means for setting a duty ratio of the pulse signal; and

given update means,

wherein, during the lighting-up period of the LEDs since the lighting-up of the LEDs starts, the given update means outputs, within a cycle set by the given cycle set means, a pulse signal having a time width relative to a corresponding duty ratio set by the given duty ratio set means, and

wherein, when a cycle elapses, the given update means instructs the given cycle set means to set a cycle taking place subsequently to the elapsed cycle by increasing the elapsed cycle and instructs the given duty ratio set means to set a duty ratio corresponding to the cycle taking place subsequently to the elapsed cycle by increasing the duty ratio corresponding to the elapsed cycle.

5. The control device of LEDs of Claim 1,

wherein the pulse output means includes:

lighting-out means that gradually decreases, of the pulse signal, the cycle and the corresponding duty ratio during a lighting-out period of the LEDs since lighting-out of the LEDs starts.

6. The control device of LEDs of Claim 5,

wherein the lighting-out period includes a plurality of cycles, wherein the cycles serially take place and wherein each of the cycles is corresponded to by a duty ratio,

wherein the lighting-out means includes:

certain cycle set means for setting a cycle of the pulse signal;

certain duty ratio set means for setting a duty ratio of the pulse signal; and

certain update means,

wherein, during the lighting-out period of the LEDs since the lighting-out of the LEDs starts, the certain update means outputs, within a cycle set by the certain cycle set means, a pulse signal having a time width relative to a corresponding duty ratio set by the certain duty ratio set means, and

wherein, when a cycle elapses, the certain update means instructs the certain cycle set means to set a cycle taking place subsequently to the elapsed cycle by decreasing the elapsed cycle and instructs the certain duty ratio set means to set a duty ratio corresponding to the cycle taking place subsequently to the elapsed cycle by decreasing the duty ratio corresponding to the elapsed cycle.

7. A control device of LEDs used in a turning signal lamp of a vehicle, comprising:

driving means that drives LEDs;

lighting-up means that gradually increases, of the pulse signal, the cycle and the corresponding duty ratio during a lighting-up period of the LEDs since lighting-up of the LEDs starts; and

lighting-out means that gradually decreases, of the pulse signal, the cycle and the corresponding duty ratio during a lighting-out period of the LEDs since lighting-out of the LEDs starts,

wherein a lamp signal is generated when a switch of the turning signal lamp is operated,

wherein, when the lamp signal indicative of the lighting-up of the LEDs is generated, the lighting-up of the LEDs starts, and

wherein, when the lamp signal indicative of the lighting-out of the LEDs is generated, the lighting-out of the LEDs starts.

8. The control device of LEDs of Claim 7,

wherein the lighting-up period includes a plurality of cycles, wherein the cycles serially take place and wherein each of the cycles is corresponded to by a duty ratio,

wherein the lighting-up means includes:

given cycle set means for setting a cycle of the pulse signal;

given duty ratio set means for setting a duty ratio of the pulse signal; and

given update means,

wherein, during the lighting-up period of the LEDs since the lighting-up of the LEDs starts, the given update means outputs, within a cycle set by the given cycle set means, a pulse signal having a time width relative to a corresponding

duty ratio set by the given duty ratio set means, and

wherein, when a cycle elapses, the given update means instructs the given cycle set means to set a cycle taking place subsequently to the elapsed cycle by increasing the elapsed cycle and instructs the given duty ratio set means to set a duty ratio corresponding to the cycle taking place subsequently to the elapsed cycle by increasing the duty ratio corresponding to the elapsed cycle.

9. The control device of LEDs of Claim 7,

wherein the lighting-out period includes a plurality of cycles, wherein the cycles serially take place and wherein each of the cycles is corresponded to by a duty ratio,

wherein the lighting-out means includes:

certain cycle set means for setting a cycle of the pulse signal;

certain duty ratio set means for setting a duty ratio of the pulse signal; and

certain update means,

wherein, during the lighting-out period of the LEDs since the lighting-out of the LEDs starts, the certain update means outputs, within a cycle set by the certain cycle set means, a pulse signal having a time width relative to a corresponding duty ratio set by the certain duty ratio set means, and

wherein, when a cycle elapses, the certain update means instructs the certain cycle set means to set a cycle taking

place subsequently to the elapsed cycle by decreasing the elapsed cycle and instructs the certain duty ratio set means to set a duty ratio corresponding to the cycle taking place subsequently to the elapsed cycle by decreasing the duty ratio corresponding to the elapsed cycle.